CLAIMS

1. A method for synthesizing a selective adsorbent comprises the steps of:

reacting a material that exhibits anion exchange behavior with an anionic oxidant to produce an intermediate; and

reacting, with said intermediate, a solution of a salt of a metal, said salt being capable of being oxidized, thereby precipitating and dispersing a salt of said metal throughout the intermediate by the action of the oxidant and producing an adsorbent.

2. A method according to claim 1, in which the step of reacting said material that exhibits anion exchange behavior with an anionic oxidant is carried out by passing a solution of said anionic oxidant through said material, and in which the step of reacting a solution of a salt of a metal with said intermediate is carried out by passing a solution of said salt through said intermediate.

3. A method according to claim 1, in which the step of reacting a solution of a salt of a metal with said intermediate is followed by the step of washing the adsorbent with an organic solvent.

4. A method according to claim 1, in which the step of reacting a solution of a salt of a metal with said intermediate is followed by the step of washing the adsorbent with acetone.

5. A method according to claim 1, in which the step of reacting a solution of a salt of a metal with said

intermediate is followed by the steps of washing and drying the adsorbent.

6. A method according to claim 1 in which, in preparing said selective adsorbent, said steps of reacting a material that exhibits anion exchange behavior with an anionic oxidant, and reacting a solution of a salt of a metal with said intermediate, are repeated.

7. The method according to claim 1, in which said material that exhibits anion exchange behavior is a polymeric anion exchange resin.

8. The method according to claim 1, in which said material that exhibits anion exchange behavior comprises weak base organic ion exchange resin beads containing primary, secondary or tertiary amine groups or a mixture thereof.

9. The method according to claim 1, in which said material that exhibits anion exchange behavior comprises strong base organic ion exchange resin beads containing quaternary ammonium groups with a positively charged nitrogen atom.

10. The method according to claim 1, in which said material that exhibits anion exchange behavior comprises organic ion exchange resin beads having a polystyrene or polystyrene/divinylbenzene matrix.

11. The method according to claim 1, in which the precipitated and dispersed salt of said metal is an oxygen-containing compound of iron.

12. The method according to claim 1, in which the solution of a salt of a metal is a solution of ferrous salt.

13. The method according to claim 1, in which said anionic oxidant is a permanganate.

14. The method according to claim 1, in which said anionic oxidant is a hypochlorite.

15. An adsorbent for the selective removal of ligands from fluids, said absorbent comprising a polymeric anion exchange resin containing dispersed particles of an oxygen-containing compound of iron.

16. A method of removing contaminants from a fluid stream wherein said fluid stream is brought into contact with an adsorbent comprising an HFO-impregnated anion exchange material.

17. The method according to claim 16, in which said contaminants are ligands.

18. The method according to claim 16, in which said contaminants are ligands containing one or more anions from the group consisting of arsenates, arsenites, chromates, molybdates, selenites, and vanadates.

19. The method according to claim 16, in which said fluid stream is a stream of drinking water, groundwater, industrial process water or industrial effluent.